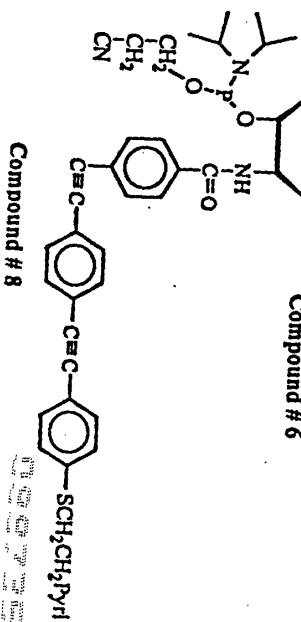
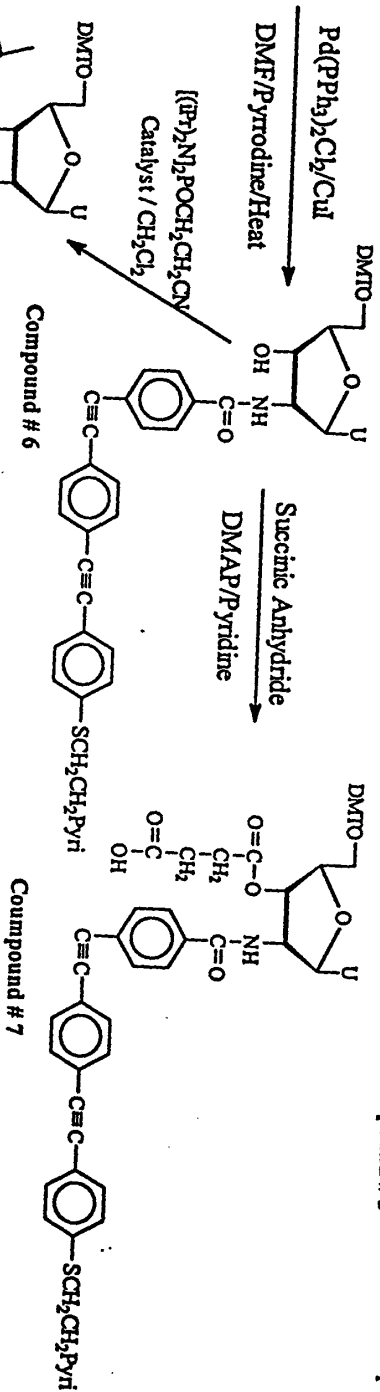
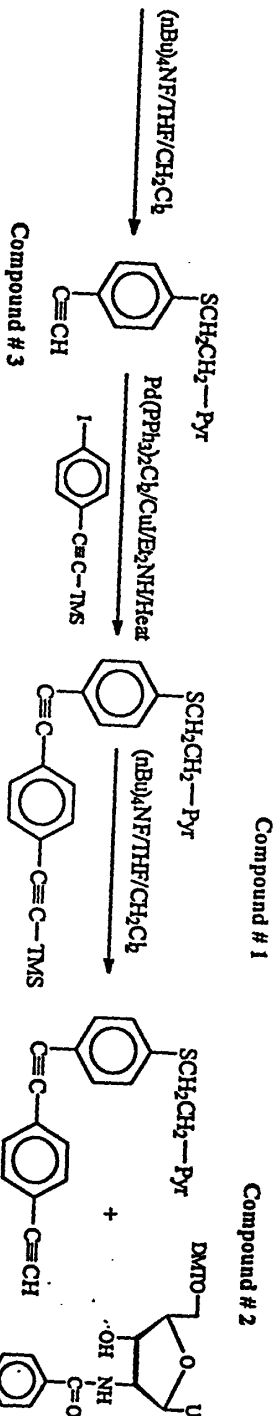
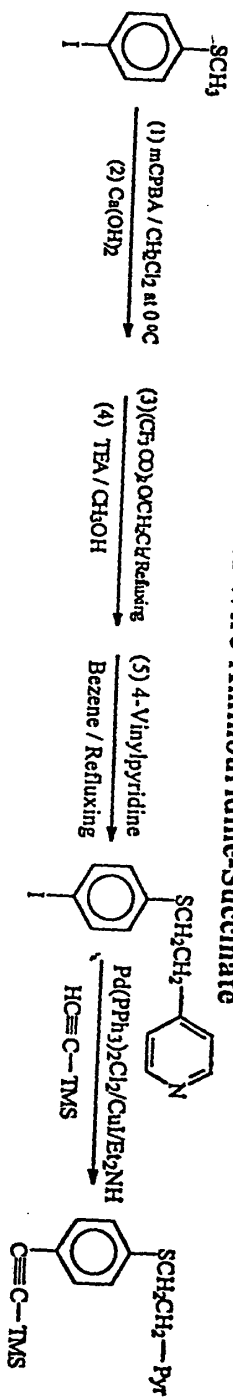


### Synthesis Scheme of Wire-Aminouridine-Succinate



# FIGURE 1

# Synthesis Scheme of 2'-Arylamino-2'-Deoxy-Uridine

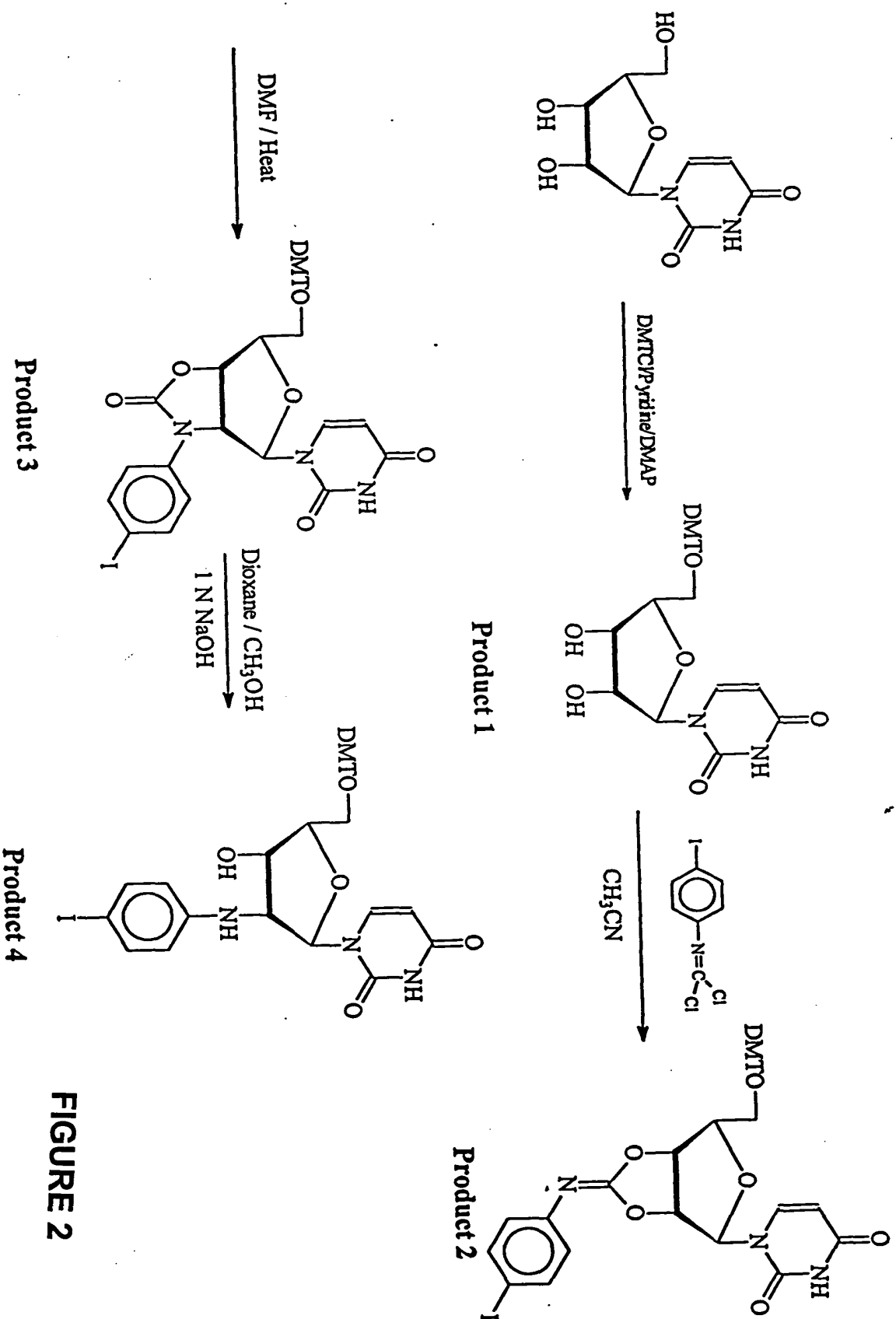
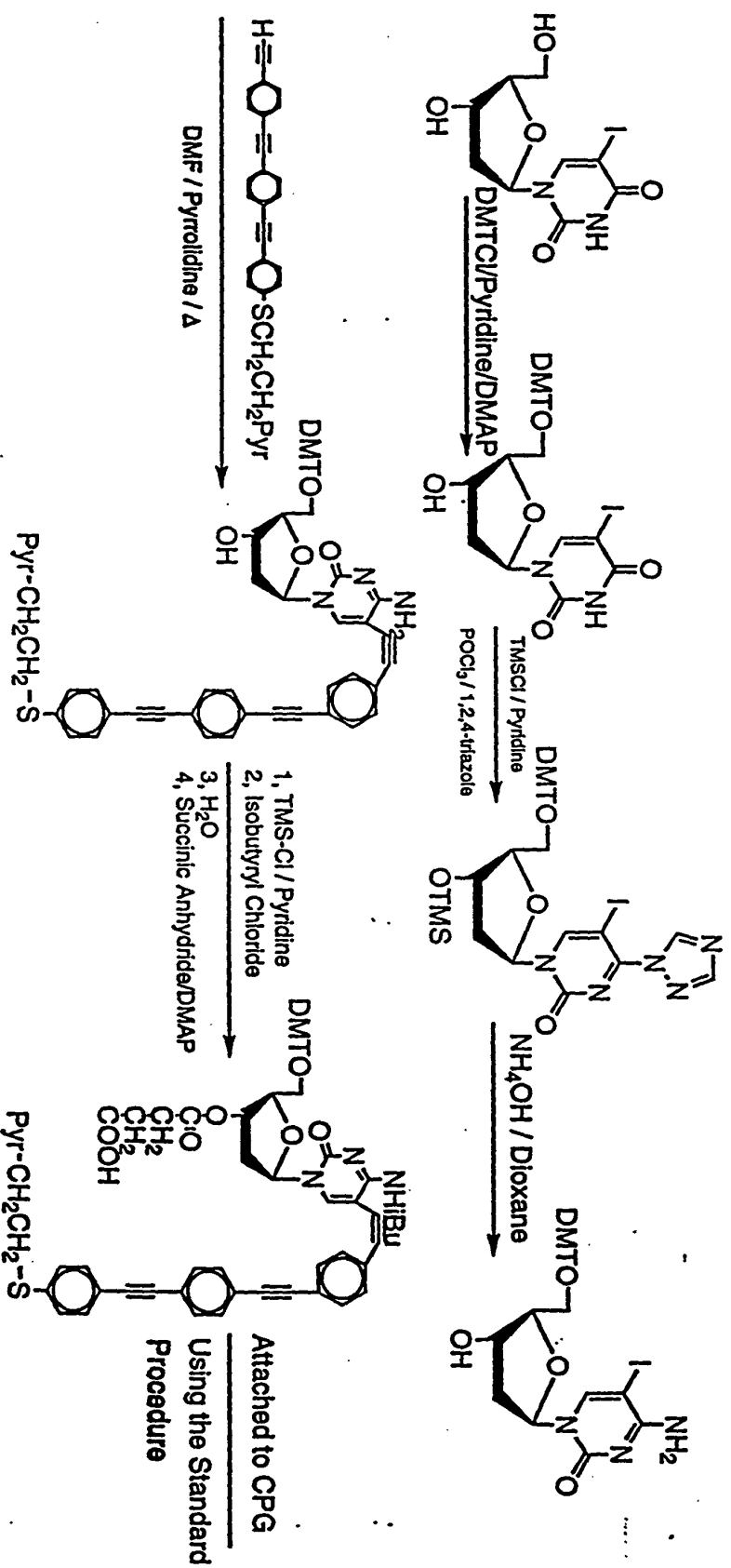


FIGURE 2

### Synthesis Scheme of Base-Modified Uridine-Wire Succinate



## FIGURE 3

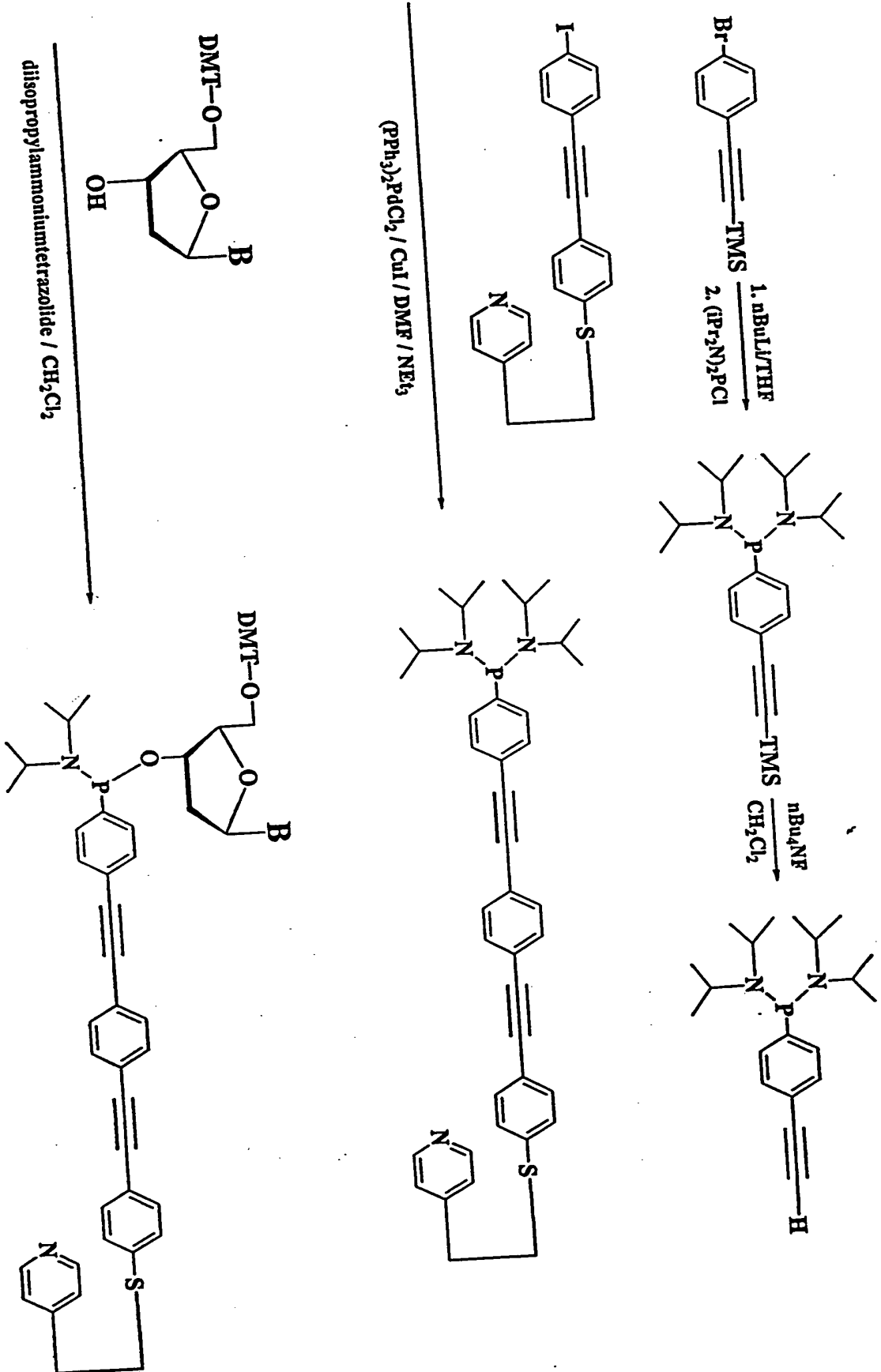
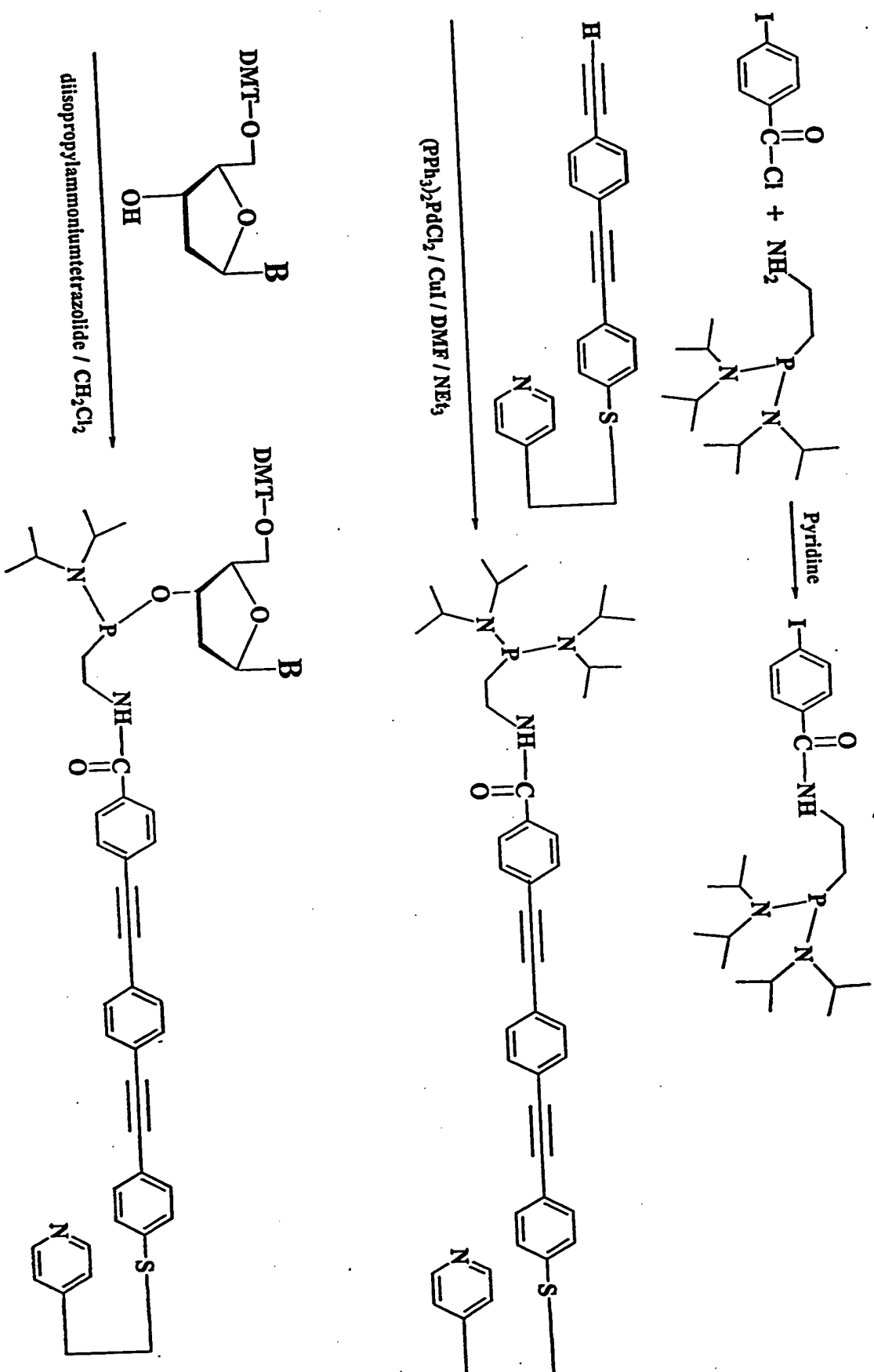


FIGURE 4

FIGURE 5



# Synthesis Scheme of Substituted Three-Unit Wire

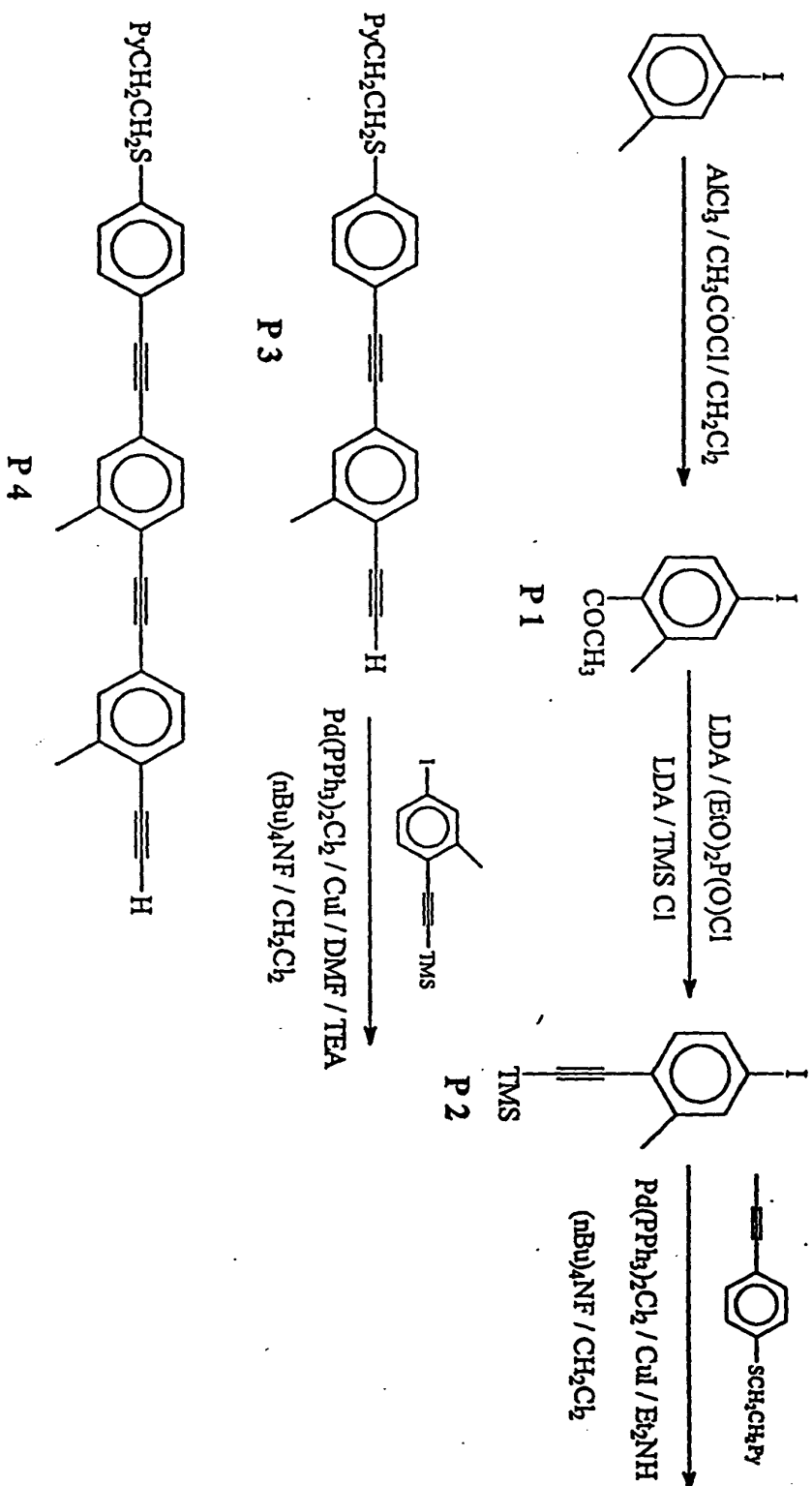
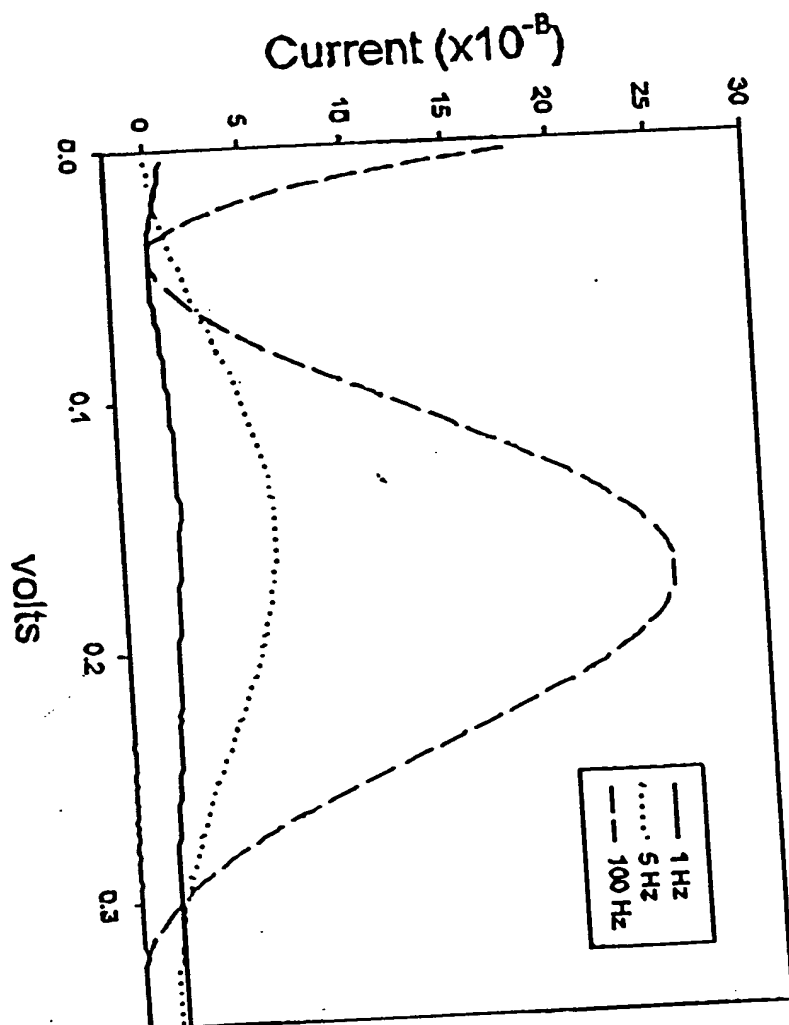


FIGURE 6



### FIGURE 8





## AC Current Amplitude

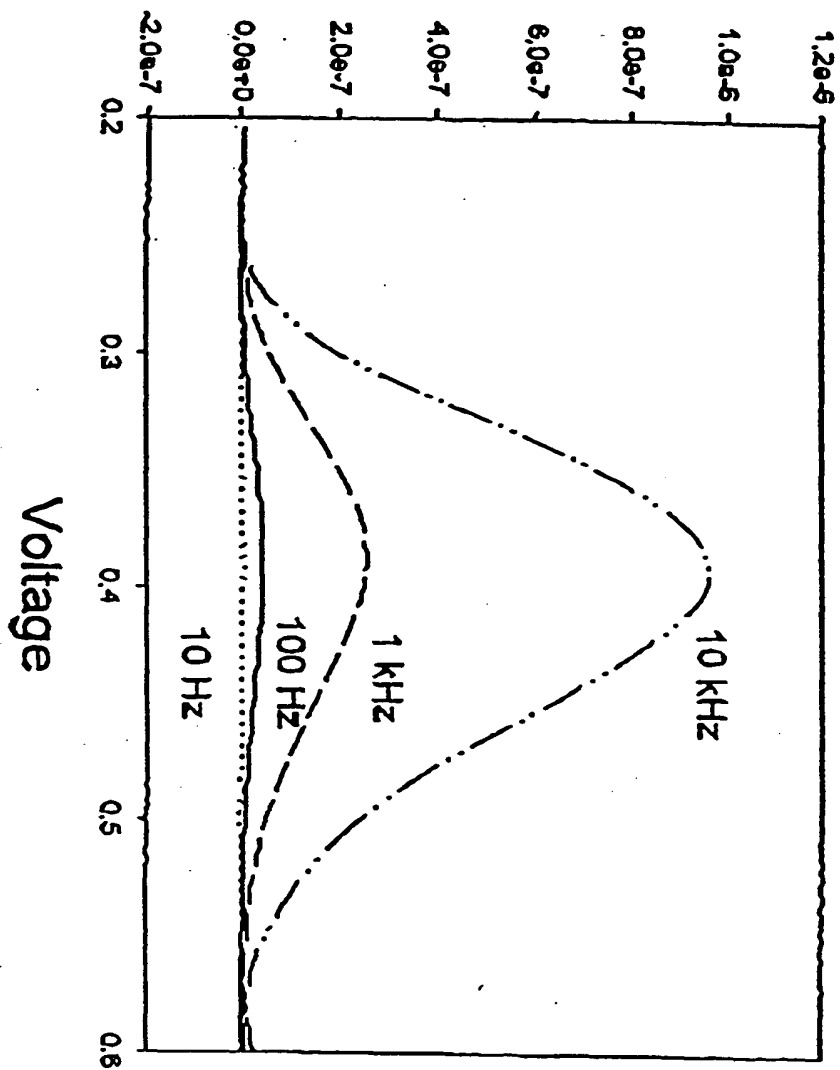


FIGURE 9A

## Double and Single Stranded DNA

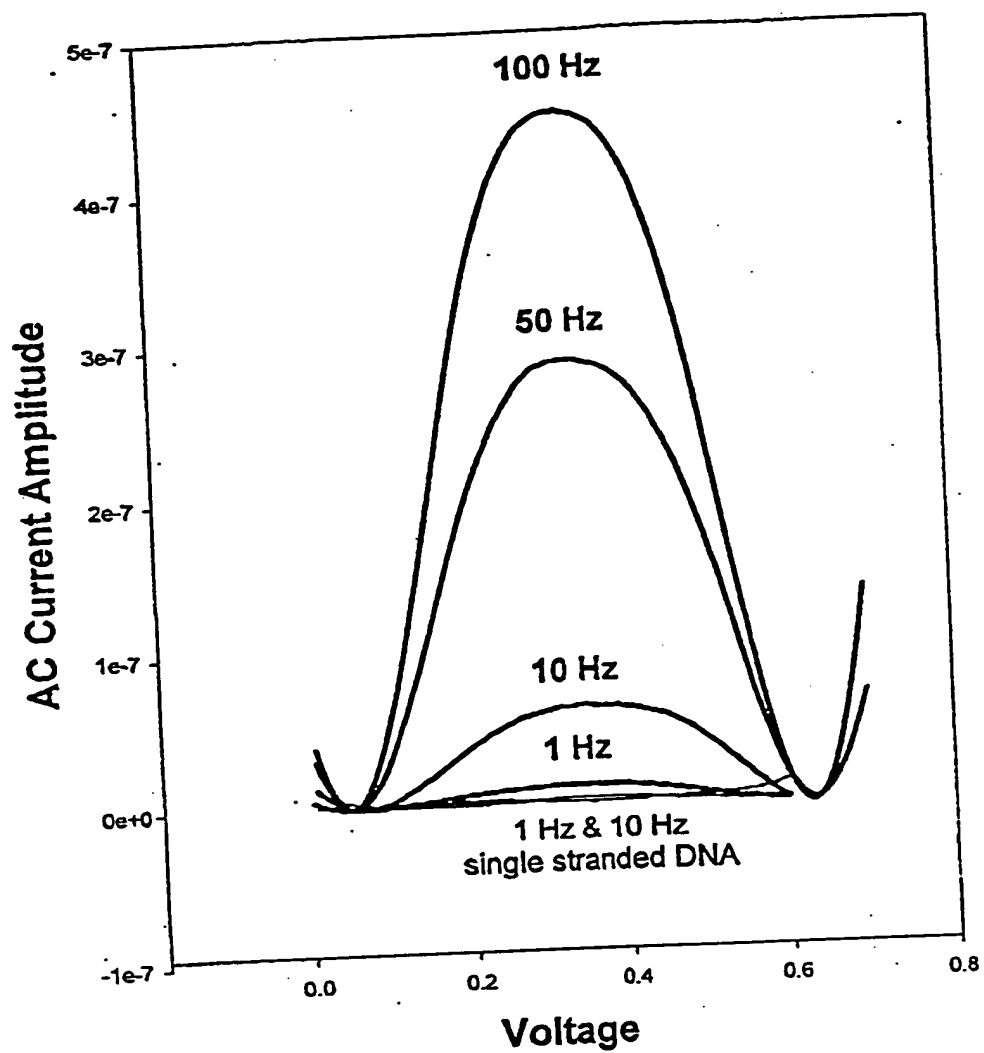


FIGURE 9B

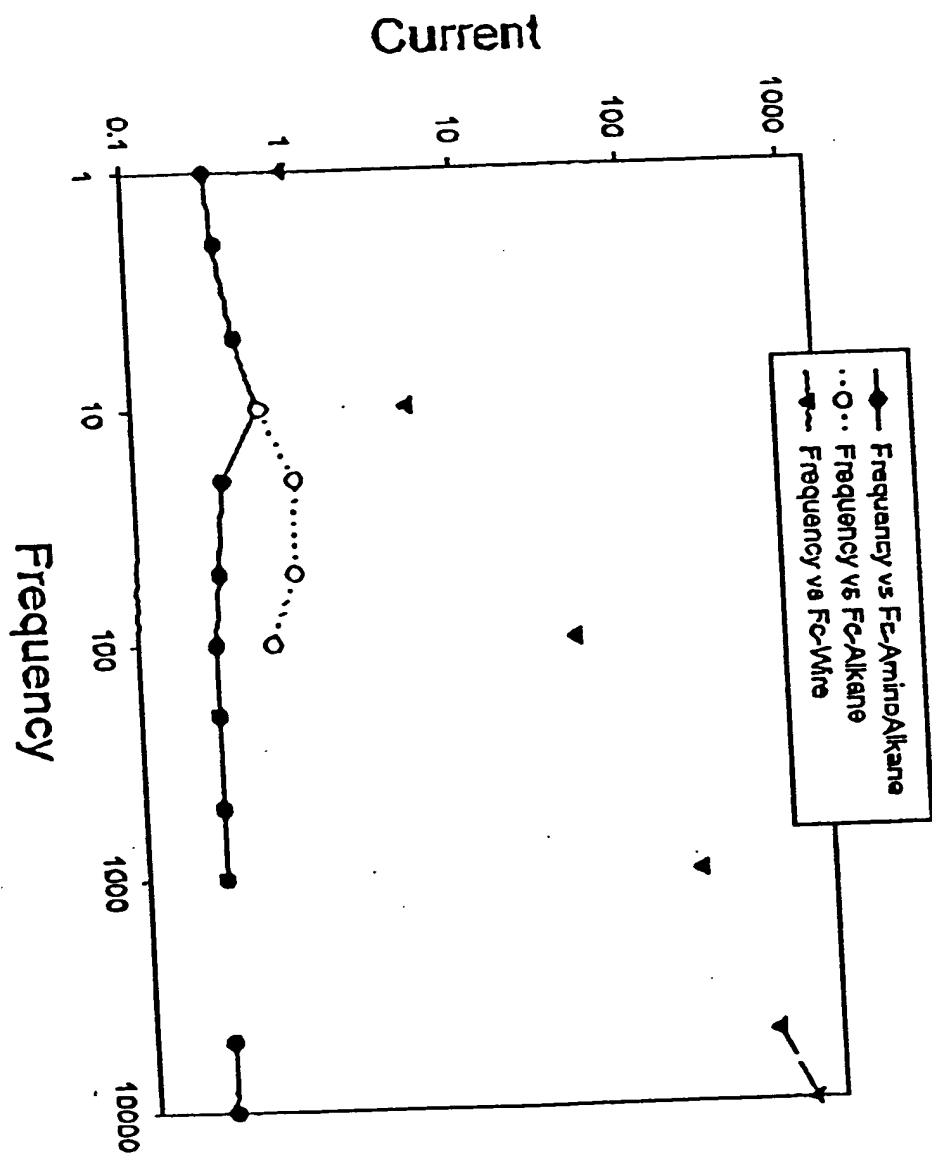


FIGURE 10

## DNA and RC circuits

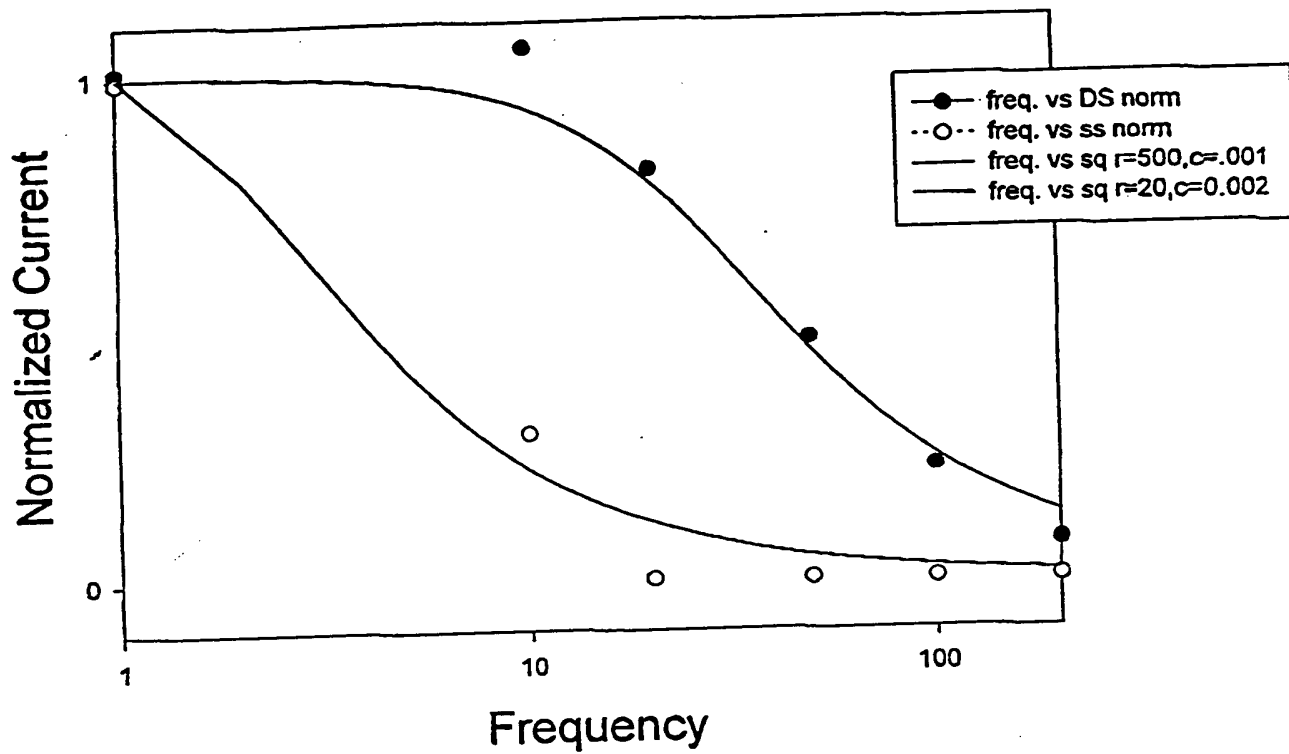


FIGURE 11

1 KHz ACV

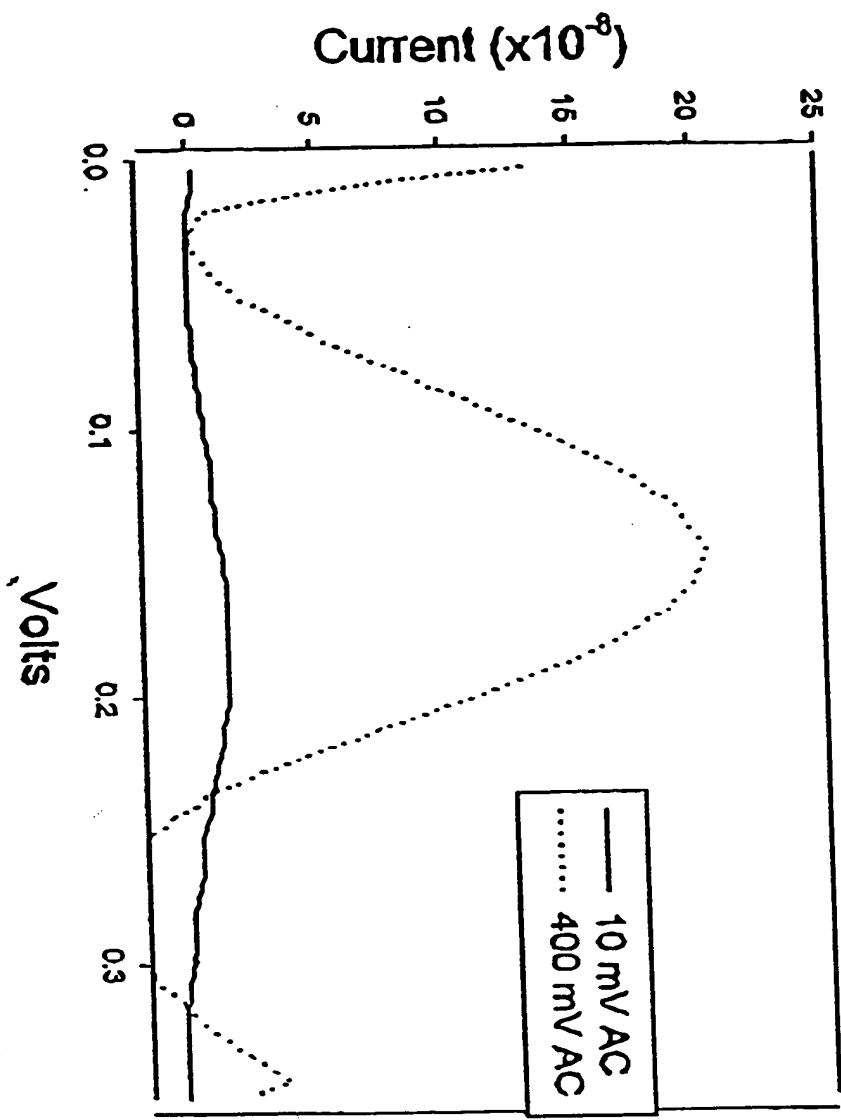


FIGURE 12

Fc alkane at 25 mV overpotential

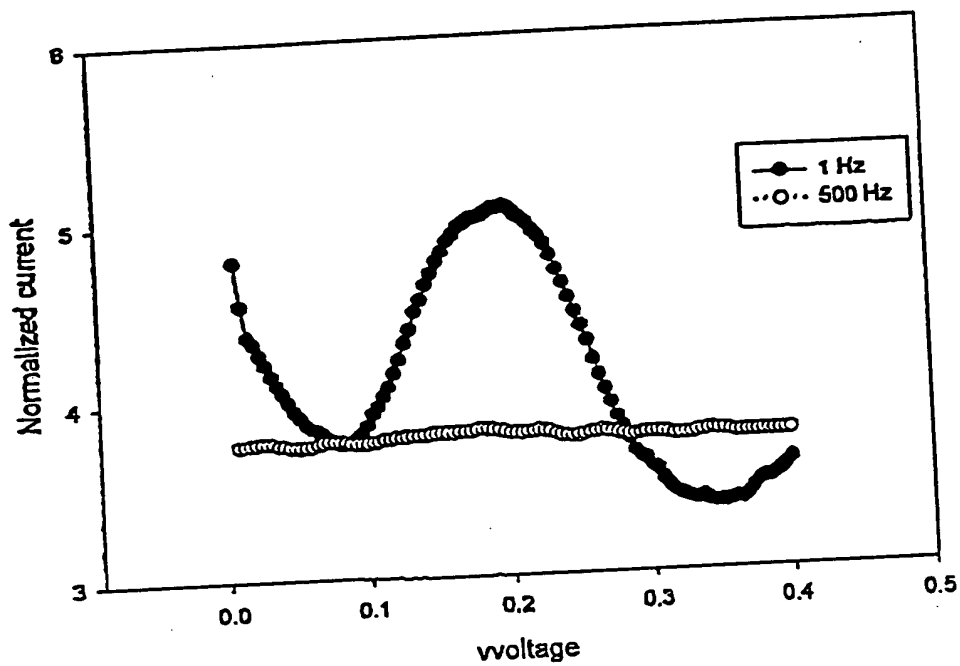


FIGURE 13A

Fc alkane, 1 Hz at 25 mV overpotential  
500 Hz at 200 mV overpotential

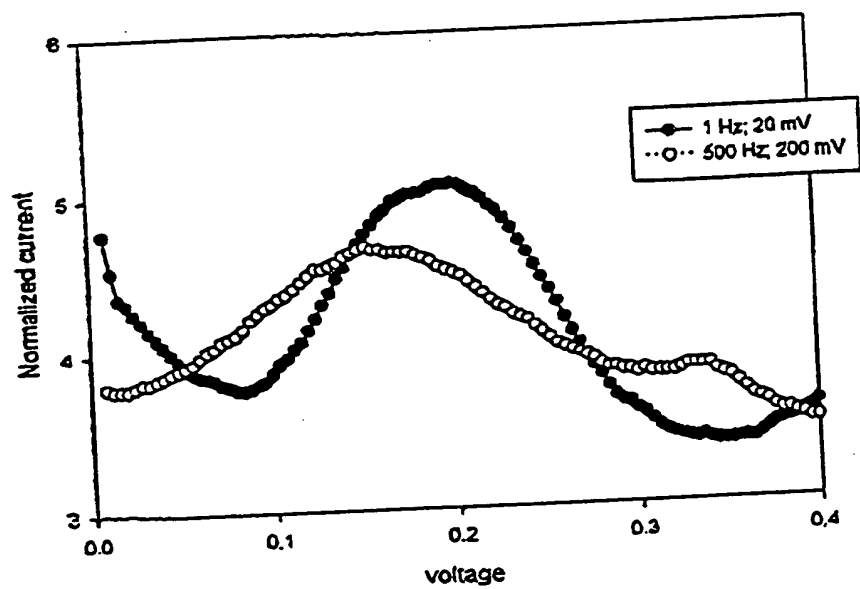


FIGURE 13B

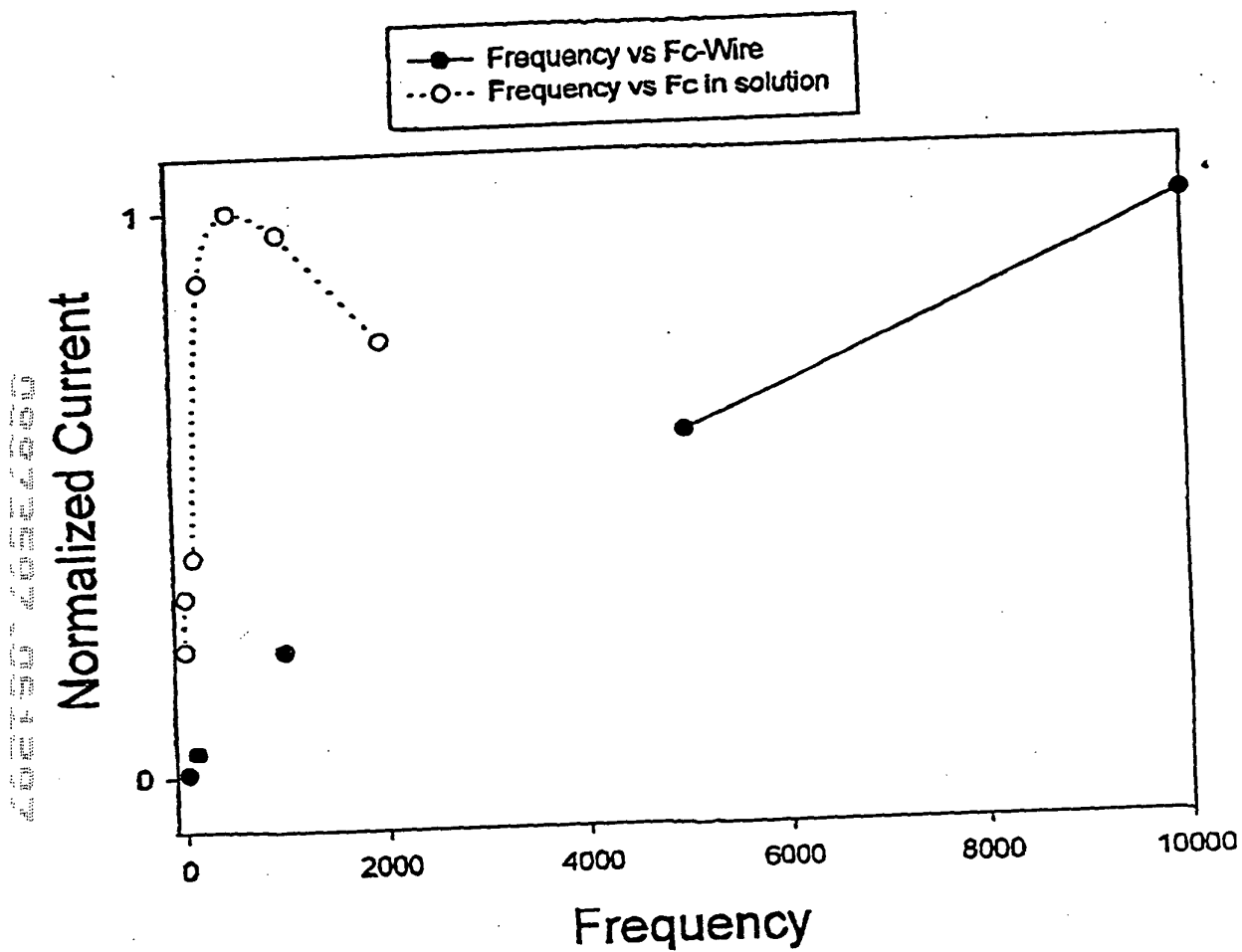


FIGURE 14

405630-2056400

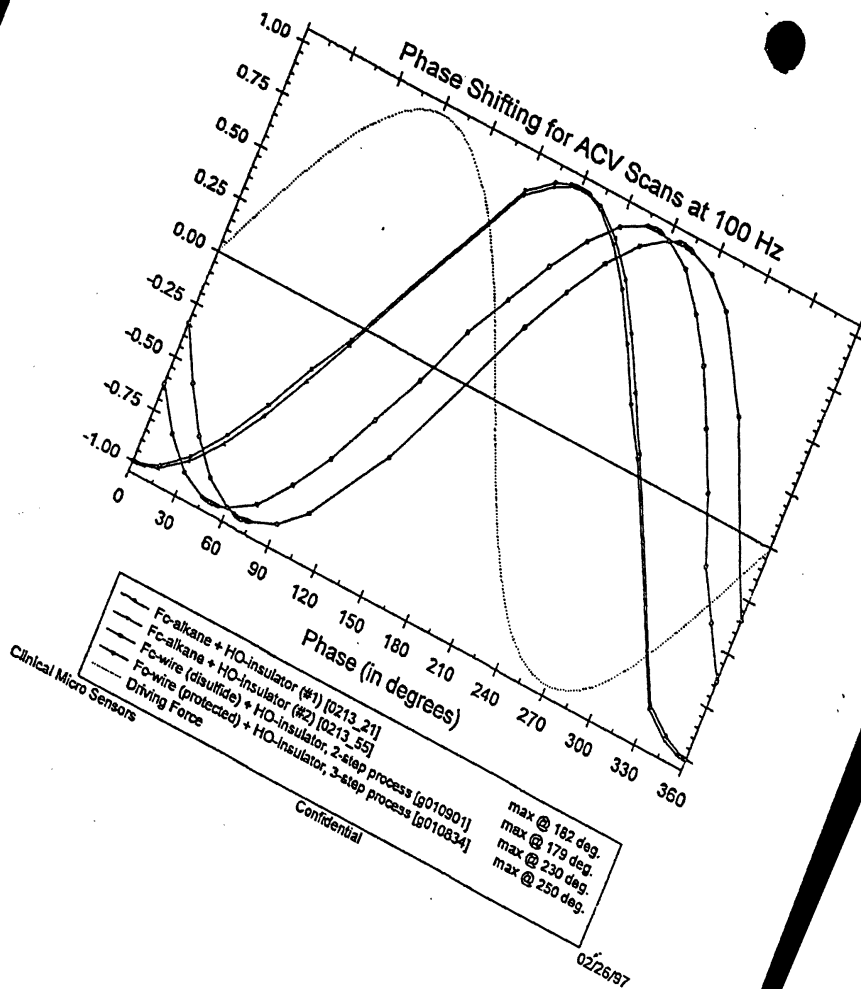
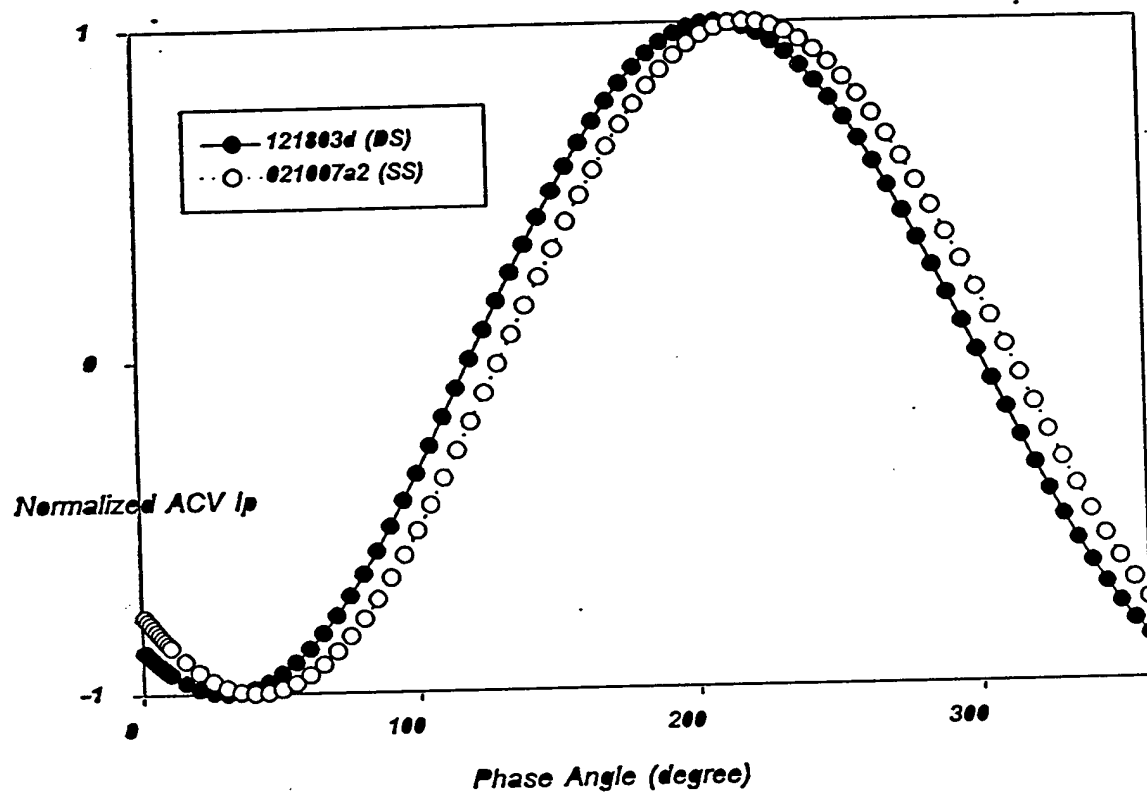


FIGURE 15A



**ACV Phase Diagram at 50Hz  
For 121803d (DS) and 021007a2 (SS)**



**FIGURE 15B**

# Synthesis Scheme of the Benzylamino-Uridine

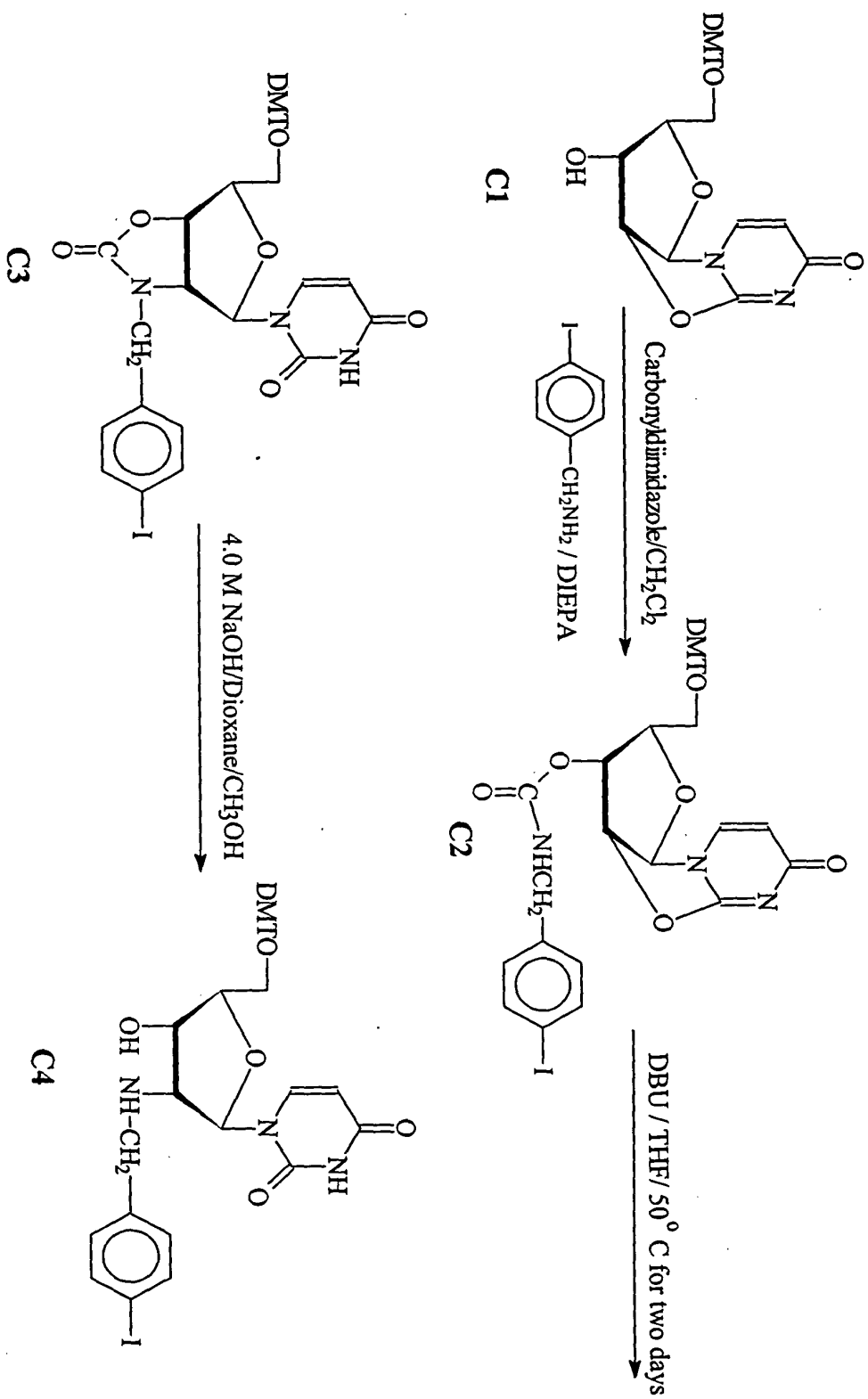


FIGURE 16

Fig 17A

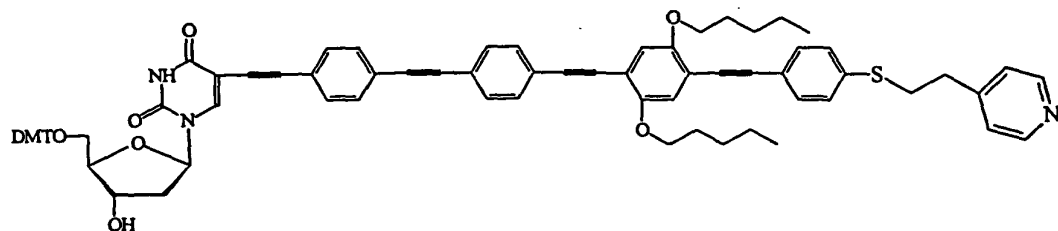


Fig 17B

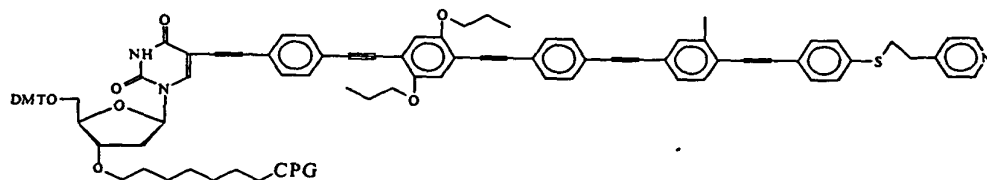


Fig 17C

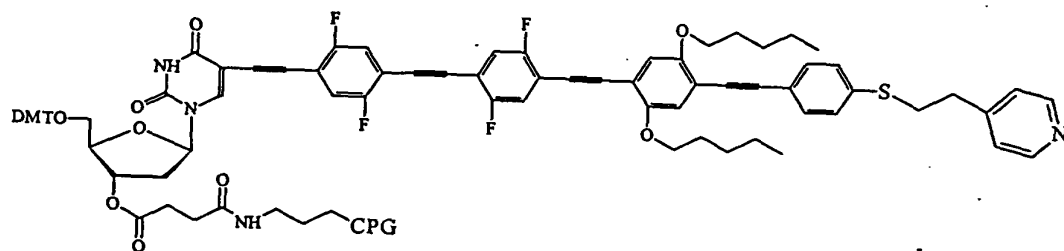
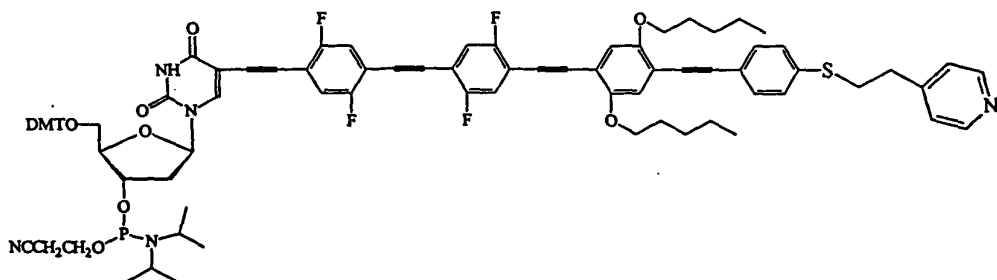
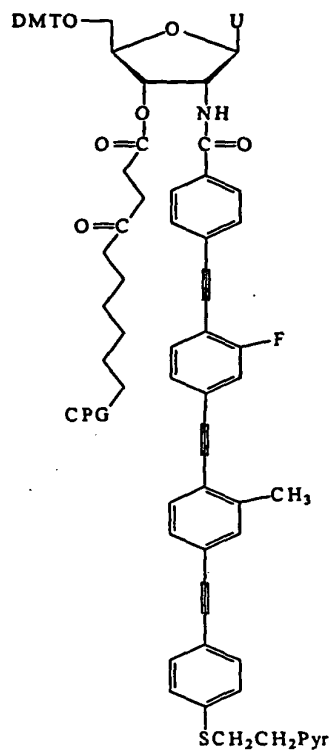


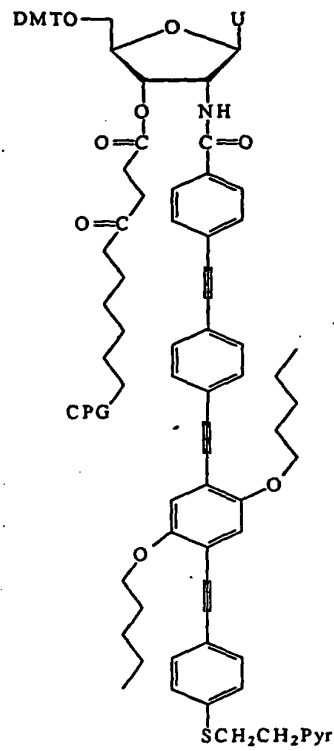
Fig 17D





4-BW-F-Uridine-CPG

Fig 17E



4-BW-2CS-Uridine-CPG

Fig 17F

Fig 17G

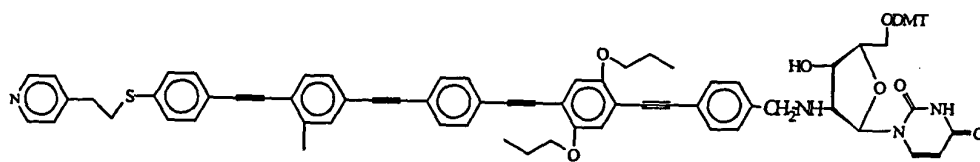
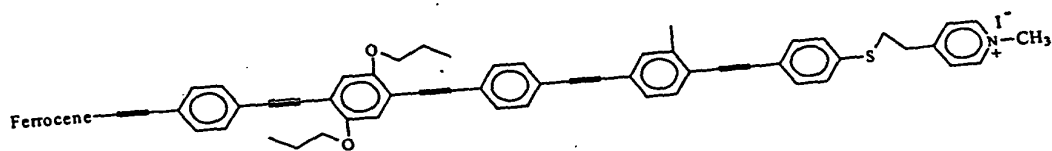


Fig 17H





## FIGURE 18

# Synthesis Scheme II of 4-Unit-Wire-uridine, CPG and Phosphorimidite

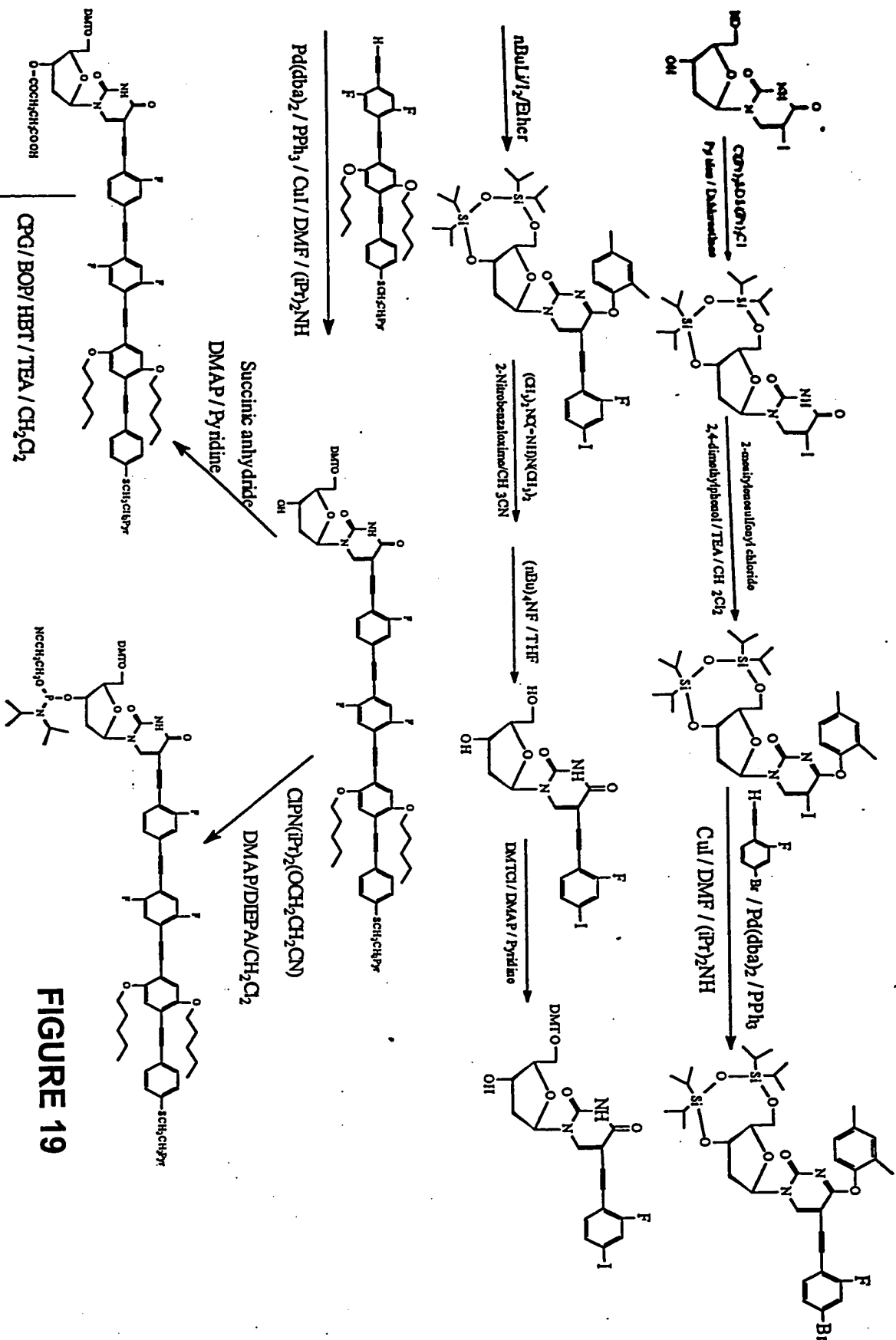
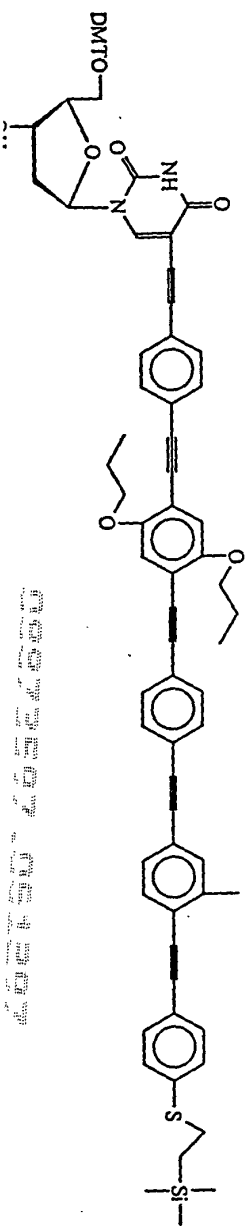
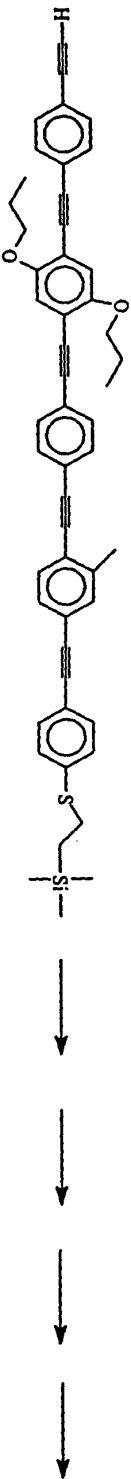
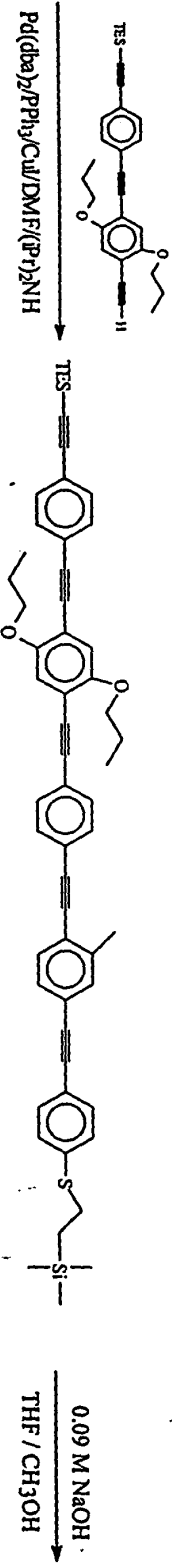
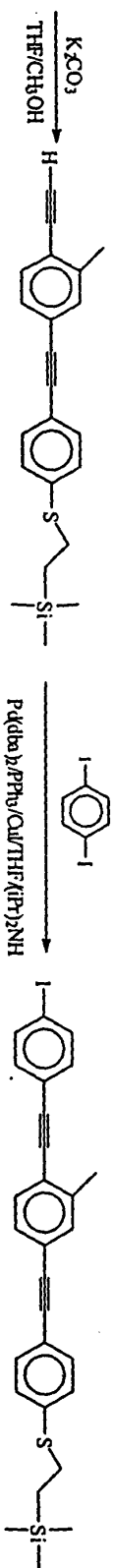
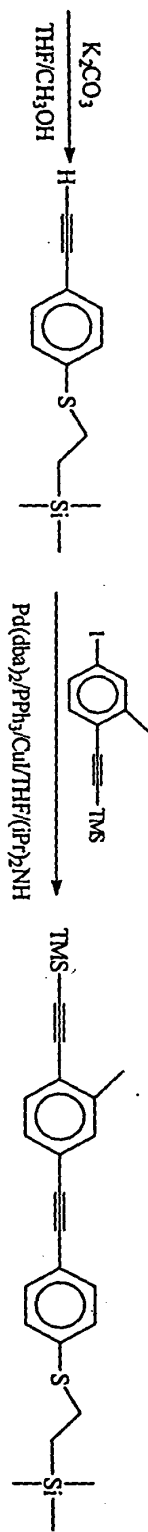
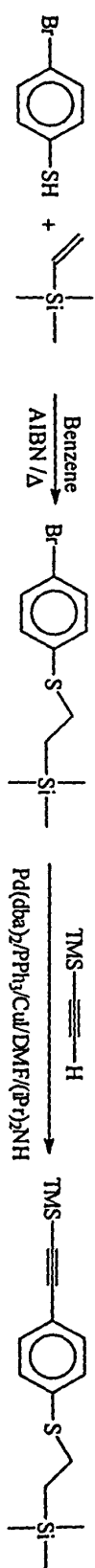


FIGURE 19

## Second Generation of Sulfur Protection in the Base-Attached Wire-DNA Synthesis



## FIGURE 20

# Second Generation of Sulfur Protection in the Sugar-Attached Wire-DNA Synthesis

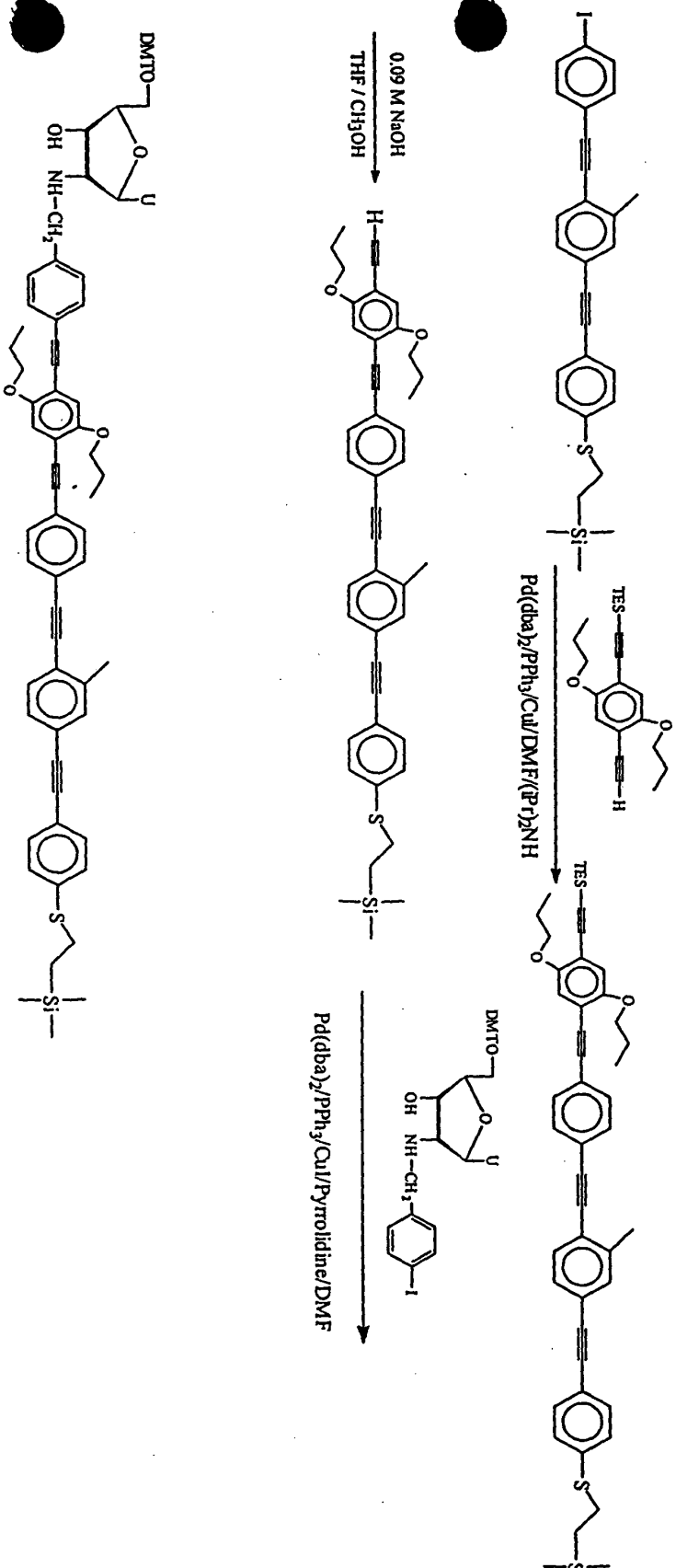


FIGURE 21

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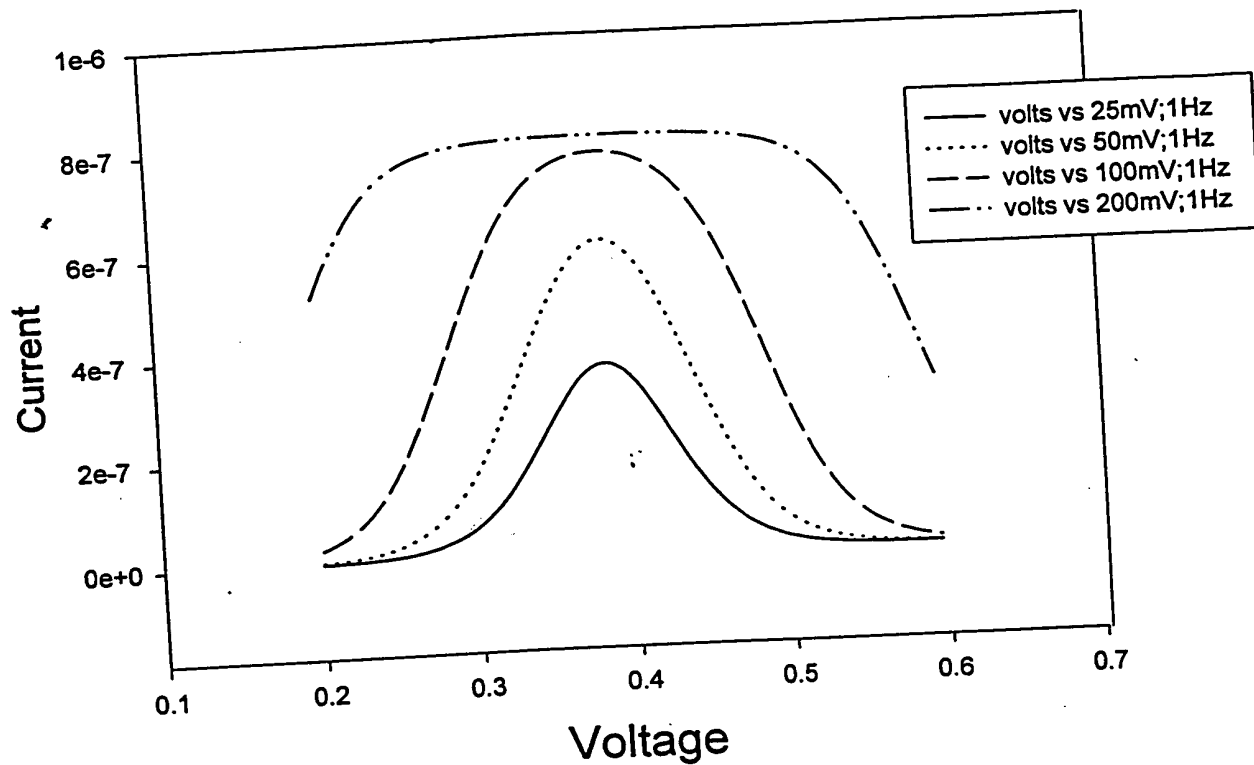


FIGURE 22A

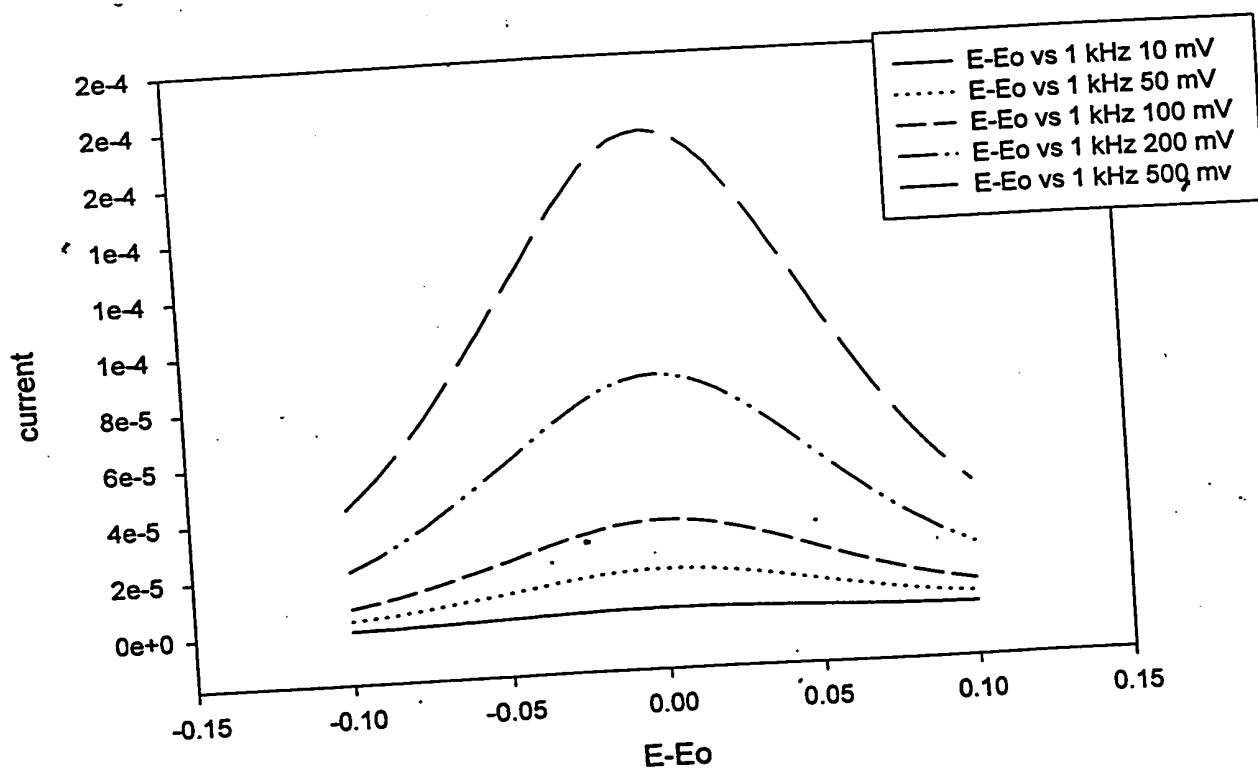


FIGURE 22B

## Fc-Wire for 10 Hz

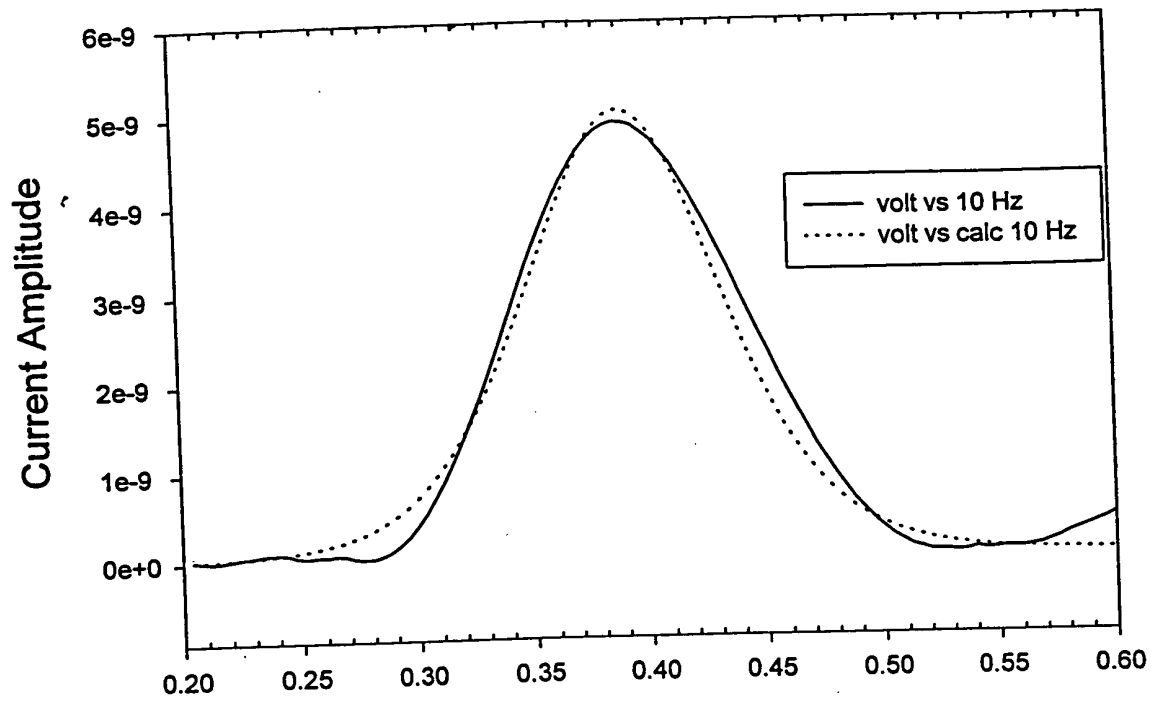


FIGURE 23A

Voltage centered around 0.38 V

## Fc-Wire for 100 Hz

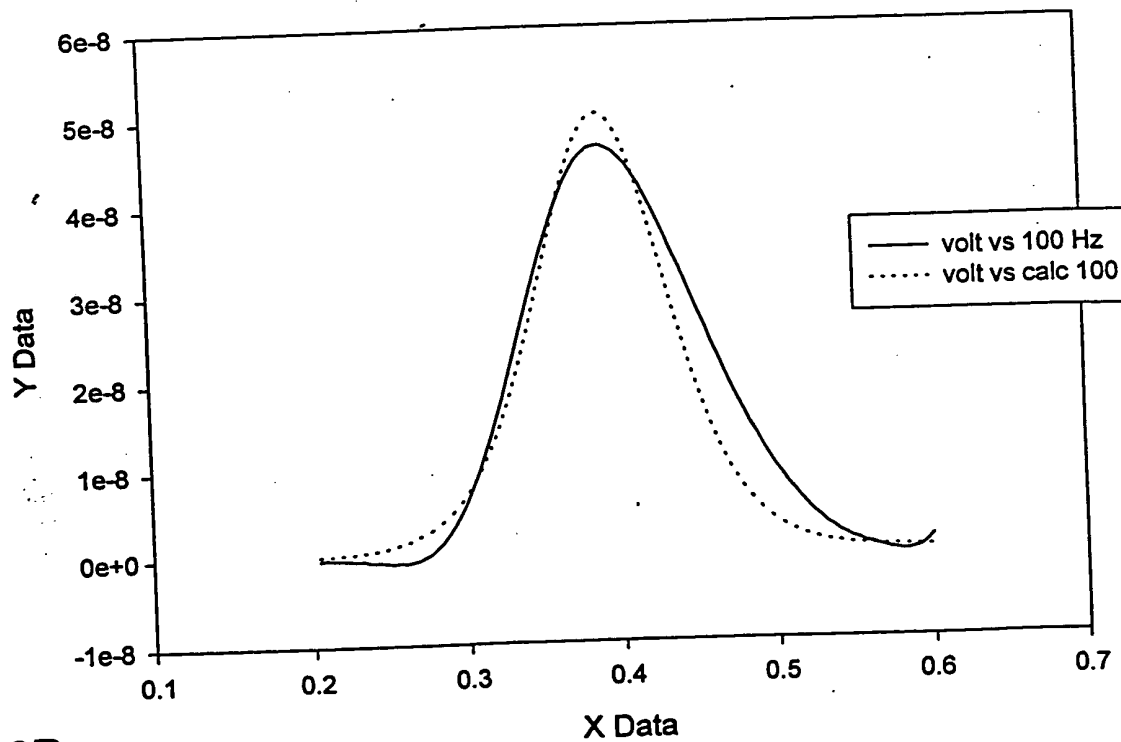


FIGURE 23B